Release A CDR RID Report

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Section NA **Page** NA **Figure Table** NA

Category Name ECS System-Level **Actionee** ECS

Sub Category

Subject Lack of ECS Requirements Traceability

Description of Problem or Suggestion:

Program Impacts:
- Lack of ECS Traceability Requirements causes unquantified ECS function loss and cost increase
- Release A functionality is shifting to later releases as shown in the December 1994 and May 1995 ECS Release Plan Content Descriptions. Continuation of this trend will result in late delivery and overall higher program costs. Shift of requirement to future releases results in an overall program schedule extension.
- Release A system implementation is missing functionality and contains unrequired functionality due to untraced requirements in August 2nd CDR RTM Baseline.
- Schedule slips and increased costs to assess requirements with missing traces, generate CCRs to correct deficiencies and incorporate into RTM baseline, and incorporate missing requirements into design and system code.

Problem Description:
There is no single consolidated view which shows how the requirements have moved from Rel A to Rel B, Rel B to Rel A, between CIs and to COTs products. The individual CIs, subsystems, and object classes do not meet all August 2 RTM Level 4 requirements or conversely appear to include extra requirements and there is not way to know if moving the requirements is intentional or whether requirements may have moved because they couldn't be completed in time for Release A.
1. Several capabilities have moved from Release A to Release B as indicated in the PDR version of the ECS Release Plan Content Description (December 1994) and the CDR version (May 1995). Although the Release Plan Content Description document is currently not a formal deliverable, it appears to be the primary source indicating the allocation of ECS functionality to release. The extent to which requirements shift is occurring can not be qualified because capabilities in the release plan do not directly trace to level 3 requirements which are under NASA control, and the release plan is not under NASA control.
2. Missing Release A SCDO requirements (including EOSD, SDPS, CSMS, and Interface requirements) traces were identified in the RTM CDR Baseline (08/02/95) in the following areas: Requirements By Release (RBR) to Level 3 Traces: A total of 8 out of 641

Originator's Recommendation

1. Place the Release Plan Content Description under ESDIS configuration control to ensure that changes require project approval and thus can be formally tracked. Establish a trend analysis chart to highlight the shift of requirements to future releases. Determine the cost by % of requirements shift and extrapolated project end date.
2. Identify traces for all Release A SCDO L3, RBR and L4 requirements.
3. For requirements that are allocated to multiple segments and multiple releases, provide further clarification in RTM what segment applies to what release.

GSFC Response by: **GSFC Response Date**

HAIS Response by: C. Gire **HAIS Schedule** 9/13/95

HAIS R. E. LiLing Chao **HAIS Response Date** 10/13/95

1. As the RID implies, the Release Plan Content Description is not a CDRL. However, it is controlled and configured through the ECS CCB and changes to it are coordinated with ESDIS. NASA would need to negotiate with ECS to place this document under ESDIS configuration control. Some level of trend analysis is being discussed by ECS SMO with NASA. But NASA has not initiated any discussions regarding determiniation of the cost of requirements shift.

2. The statisitics cited in the RID regarding requirements traceability in RTM is essentially correct for release A, although of the 161 RbR to L4 trace problems some 40 are F&PRS RbRs and the rest are IRD RbRs. CCRs are being processed to correct in RTM the missing traces between the F&PRS L3s and IRD requirements with their respective RbRs (CCR 95-0668), and between F&PRS RbRs with L4s (CCR 95-0631). A CCR is being processed to update the IRD RbRs to accurately reflect the actually approved IRD documents. After this RTM update is applied, a CCR will be generated to correct missing IRD RbR traces to L4s. A future CCR will address L4s which do not have RbR parents.

3. In the current RTM schema implementation, a single RbR may be allocated to only one release - the intent is that they are Requirements by Release derived from the original F&PRS L3s and IRDs. So it may take multiple RbRs across releases to ultimately satisfy the parent F&PRS L3 or IRD requirement, which appears to be the point of the RID comment. ECS now only has

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Status **Closed** **Date Closed** **11/20/95** **Sponsor** **Schroeder**

****** **Attachment if any** ******